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AN  
**ADDRESS**

BEFORE THE  
**HAMPSHIRE, FRANKLIN, AND HAMPDEN  
AGRICULTURAL SOCIETY ;**

DELIVERED IN GREENFIELD, OCT. 23, 1833.

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BY HENRY COLMAN.

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PUBLISHED AT THE REQUEST OF THE SOCIETY.

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TO JOHN LOWELL, ESQ.

THE ROXBURY FARMER ;

*Whose talents through life have been devoted to objects of public utility and improvement ; and to whose enlightened, indefatigable, liberal, and disinterested exertions, the Agriculture of Massachusetts is in the deepest measure indebted, this Address is inscribed with sentiments of the highest respect by its*

AUTHOR.

Meadowbanks, Deerfield,

Oct. 1833.

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## ADDRESS.

"THE efforts to extend the dominion of man over nature," says Bacon, the great master of Philosophy "is the most healthy and most noble of all ambitions." This admirable sentiment is in nothing more true than in its application to agriculture. Here man exercises dominion over nature ; exerts a power more nearly than any other resembling a creative power ; commands the earth on which he treads to waken her mysterious energies ; spreads fertility over barrenness ; scatters the beauties and glories of the vegetable creation, where before all was desolate ; compels the inanimate earth to teem with life ; and to impart sustenance and power, health and happiness to the countless multitudes, who hang upon her breast and are dependent on her bounty.

Agriculture is the great interest of every community advanced beyond the savage state. I mean no invidious distinction. The interests of the social body are various ; and in proportion to its improved condition its wants are multiplied to an indefinite extent. Many hands and many arts are necessary to erect, support, furnish, light up, adorn the grand superstructure of society, and supply the wants and provide for the entertainment of its innumerable and insatiate guests. The division of labor is one of the most important improvements of civilization, and one of the surest evidences of its

advancement. It is essential to the perfection of the arts of life. The humblest occupations are important ; and, if useful and honest, are respectable. He who labors with his mind, equally as he who labors with his hands, is a working man. The hardy ploughman who "jocund drives his team a'field," and proudly strokes the smooth coats of his cattle, has no reason to envy the pale and emaciated scholar, poring till faint with exhaustion over the half formed progeny of his wearied brain ; with eyes scarce open hunting for metaphors by the expiring rays of his midnight lamp ; and waiting so long with hope deferred for the gushes of inspiration, that when at last the waters are troubled he has not strength enough left to crawl to the fountain. In the crowded hive of human life, they who build the cell, as well as they "who gather the honey to store it well" are mutually useful and essential. But among the various occupations of society, agriculture obviously holds a commanding rank. If the prince may proudly say "I govern all," and the soldier "I fight for all," and the merchant "I pay all ;" the farmer may hold up his head as high as the rest, and with a noble self complacency may say, "I feed all." What would become of the operatives, and of what use would be the curious and exquisite machinery of the largest establishment, if the power-wheel should cease its revolutions ? Manufactures and commerce, all of science and all of art, all of intellectual as well as physical good, are dependant on agriculture. The agricultural products of one year are not more than sufficient for the consumption of the animal creation until the succeeding harvest pours out its golden treasures. If the husbandman should remit his labors for a single season the human race must perish. What would philosophy do without bread ? Without agriculture the thundering wheels and the buzzing spindles of the manufacturer must cease their gyrations. She too loads the buoyant arks of commerce, and bids them speed their flight to the remotest regions of the earth, and return deeply freighted with the treasures of foreign climes.



Agriculture as a profession begins to occupy the rank among us to which it has a just claim. Some of the most distinguished men in our own and other countries, in the present and past ages, men as eminent for intellectual and moral attainments as for the station which they have occupied in public regard and the part which they have performed in public affairs, have honored the profession and themselves by engaging even in its humblest labors and details ; and have ingenuously confessed that they have found in its calm pursuits an inexhaustible source of interest and recreation, and a more grateful pleasure than the brilliant scenes of public life have afforded. The elements of true dignity of character are integrity, usefulness, activity, and intelligence. This beautiful valley, watered by the beneficent stream, whose name it bears, and fenced in by those magnificent highlands, which mark its progress to the ocean, presents in its farming population so many examples of this noble combination, that the profession of agriculture here occupies a front rank among the most useful and respectable.

It is with unfeigned diffidence that I address an assembly of such men on this occasion. Feeling myself, even after years of inquiry and practice in this great art, only a learner, and a comparative stranger in this part of the country, I was honestly averse to this duty. I shall attempt nothing more than to offer such hints, as may stimulate the inquiries of others ; and should it appear, that I am greatly out of my place, I shall console myself with the reflection, that the responsibility of the appointment rests not with him who accepts, but with those who make it.

The agriculture of the counties under the auspices of this Society is highly respectable ; but I trust I shall not give offence, by saying that it admits of great improvements ; and by referring to some points to which our efforts for improvement may be directed.

The agricultural population here may be divided into three

classes. First those, who, besides cultivating some land, are likewise tradesmen or mechanics ; and with their agricultural unite some mechanical or professional pursuit, to which their farming is only secondary. The returns of husbandry are in general so much slower and smaller than those from their art or trade, that the latter is likely to absorb much of their attention to the prejudice of their husbandry. There are eminent exceptions to this remark ; and we owe to some of these persons many valuable experiments in agriculture, which their ready capital has furnished them with the means of making under circumstances of great advantage.

The second class is composed of those, who, occupying small farms, look for nothing from their farms beyond the bare support of their families ; having other resources, they feel independent of its returns ; or devoid of ambition, and indolent and improvident, they are content with the most scanty returns. Ignorant of the art of living, they are in general in the midst of the means of abundance destitute of common comforts ; and are satisfied if they obtain, by a little labor incessantly and indifferently applied, the bare necessities of life.

The third class comprehends those with whom agriculture is an exclusive profession ; who are willing to labor and are seeking the fair rewards of industry. Stimulated by an honest desire of profit, they are anxious to extend their cultivation to the farthest point to which it may be carried to advantage. It is to this latter class, who alone, properly speaking, deserve the name of farmers, that my remarks will be directed.

Farming here consists of three kinds ; first, dairy farming ; second, grazing, embracing sheep husbandry, and the raising of young stock ; and lastly arable farming, including the consumption of the produce on the place by the stall-feeding of cattle, sheep, or swine. There are many farms, which to a certain extent combine these pursuits ; but these objects are distinct, and cannot often to any great extent be advantageously prosecuted together.

I. Of dairy husbandry, I shall say little. The art of making cheese is well understood among us ; and its quality in general good ; but in regard to butter, great improvement is as desirable as it is practicable. Much of that manufactured here is scarcely tolerable. Any person, accustomed to eat the butter brought into the Philadelphia market, must have observed its extraordinary superiority in flavor and richness to the article generally produced among us. What occasions this superiority ? There is an advantage in the spring houses of the Pennsylvanians, built of stone over some running water, where the milk is always kept, and which is devoted exclusively to dairy purposes. This and the cultivation of white clover in their pastures, the frequent churning, so that the cream is never old, the entire expression of the butter-milk, and the most particular attention to cleanliness in every part of the process, are the probable means of their success. But in these respects there is not a single circumstance in which we might not equal them ; and since the difference in the prices of butter between that of an exquisite quality and that of an ordinary kind is more than a hundred per cent, our dairy farmers have sufficient inducements to endeavor to excel. The premiums bestowed for this purpose under the direction of the Massachusetts Agricultural Society have had a highly beneficial effect ; and have proved that we are capable of producing as good butter as can be made. Some exhibited on the present occasion fully establishes this assertion. I may remark in this connexion that little attention is paid to our pastures. Plaster and ashes are seldom applied to them, though in most cases without a doubt the application would be highly beneficial ; and they are suffered without concern to be overrun with brakes, briers, and that increasing pest the Canada thistle. There is reason to believe too that our dairy farmers pay little attention to ascertain the comparative quality of the milk of their different cows, which in respect to its yield of cream, and of course the amount of butter which may be made from it, must differ very



greatly ; some yielding milk of the richest quality ; and the milk of others being worthless.\*

II. In respect to sheep husbandry and the raising of young stock many farms from their rough and mountainous character are adapted solely to these objects. The raising of neat stock, however, beyond the consumption of coarse fodder upon a farm, is not a source of great profit, unless upon land of low price. The stall-feeding of beef animals upon hay and meal is likewise a very doubtful source of gain at the average price of hay and grain among us. Few farmers have exactness enough of calculation or experiment to determine whether it does or does not yield a fair compensation for their labor and produce ; and the purchasing of cattle for the purpose of stall-feeding, is so much matter of judgment, skill in trade, or mere accident, the thrift of different animals is so different, the state of the market is so precarious, and by the present mode of management the farmer is liable to so many impositions and frauds on the part of dishonest dealers and butchers, that the chance of success is by many judicious farmers considered very small. It were greatly to be wished that some mode or standard could be adopted of selling the animal by live weight on the hoof, to avoid the evils and inconveniences of the present mode, by which the seller is placed entirely at the mercy of the buyer with no security against fraud and with scarcely the possibility of redress.

It is confidently believed that the sheep husbandry, when judiciously pursued, affords far better prospect of gain. It is ascertained, that no husbandry will do more to preserve and improve the condition of a farm ; and those farmers, who have

\* In a former publication, I have stated a fact coming under my own observation, that in an experiment of milk taken at the same time and placed in the same situation and where the cows were fed in the same manner, the milk of one cow yielded at the rate of one inch and three tenths of an inch of cream upon nine inches of milk, and that of another cow in same yard produced only two tenths—in the quality of the milk of the two cows for the purpose of making butter, the difference then was 13 to 2.



steadily persevered in it, even under all the fluctuations through which the prices of wool have passed, have received a full remuneration for their care and expenditure. The great question of comparative advantage between the fine woolled, the medium quality, the long woolled, or our common native sheep, presents a subject involving such various considerations, that the present time does not admit of its discussion. The introduction of fine woolled sheep into the country has been of very great advantage; and though to the serious loss of those persons, who as mere speculators, deluded by most extravagant calculations of profit, paid enormous prices for their flocks; yet to the ultimate and great benefit of those more prudent or more fortunate individuals, who came after them, and reaped the advantage of a reaction in the public estimation of the value of these races of fine woolled sheep, which the heavy disappointments of the first purchasers occasioned. Extreme fineness of fleece is obtained only at the expense of a small and tender carcase. It is confidently hoped that by a judicious combination of the merino with sheep of a larger size a race may be gradually formed yielding wool of a sufficient degree of fineness for the common demand combined with a carcase large enough for the market. Such attempts have already been made with every prospect of success.

III. I pass hastily along to the subject of arable farms. Indeed I can do no more than suggest a few imperfect hints for your consideration, as I fear I may trespass upon the kindness of a portion of my audience, who feel little interest in the humble details of agriculture. Few will deny that the details are proper to this occasion. I need not bespeak the candor of farmers' wives and farmers' daughters, if indeed the old race of milk maids and working girls be not wholly extinct; and I may whisper even to the gentlest, the sweetest humming birds and the most gorgeous butterflies of the fair sex, that they may gather honey from the wildest flowers of the most neg-

lected field. I may crave too that they would not disdain the husbandman's humble toil, since they are not too ethereal to be beyond the need of its fruits ; I may say more, that love is so wayward, perchance some sturdy ploughman may yet be eligible to the highest honors, which they have to bestow ; but let them not be unduly alarmed at an accident of this kind ; under his tanned skin, his rough hand and his coarse exterior, there is often found as true a heart and as devoted a duty, as in the the most polished beau that ever emerged from a city bandbox.

The territory, embraced under the auspices of this society, comprehends a great variety of soil ; and much of the best arable and meadow land in New England. Nor is there any extraordinary discouragement here to cultivation ; labor is not more expensive than in other parts of the country, though it is too high compared with the value of the produce ; vast quantities of bread stuff are imported into the country ; and whatever grain is raised will for the present command a higher price in cash than the same articles on the sea-board.

There are however some serious obstacles to success. One of the principal is the worn-out character of our lands. They have been so long under cultivation as to become exhausted, and yield small returns to the cultivator. Our crops of Indian corn do not average more than thirty bushels to the acre ; of rye not more than twelve ; of potatoes not more than two hundred ; and of hay, excepting on alluvial lands annually inundated by the river, not more than one and a half ton. These crops are by no means what they might be. Now whether it is owing to too severe a cropping by the repetition of the same crop on the same land without intermission ; or too scanty manuring ; or to an injudicious cultivation, I shall not presume to decide. In some cases these several causes are combined.

Liberal manuring is the basis of all successful agriculture ; and it is folly under any circumstances, excepting the virgin lands of the West, where there has been for centuries an accumulation of untouched vegetable matter, to disregard the

great law of nature, which requires that the soil should be often replenished in order to obtain its products, as much as that the cow, which is daily milked, should be daily fed. Next to liberal manuring a judicious rotation of crops should be followed up; for nature chooses a variety, and scarcely a crop of any kind can be cultivated successively, and without intermission on the same land, without a gradual diminution of the produce. The best advantages may be expected likewise from that great discovery in agriculture, the renovating influence of clover, which, being sowed with small grain and well plastered, and being afterwards turned under by the plough, will inevitably place the land in a course of improvement. It is questionable with some farmers, whether it is best to plough in the clover the year after its being sown with the stubble of the grain crop; but there is good reason to believe that it is better to suffer the clover to remain one year, and to adopt what is commonly called the three shift system; for example, first corn; then small grain with clover, which is to be well plastered; and then clover to be mowed or fed; and this, where the clover can be advantageously pastured with sheep, will secure the gradual improvement of the land.—There are other ameliorating crops; and the ploughing in of green crops in several decisive experiments has been signally successful; but no system can be worse than that sometimes practised, and of which examples may be seen in the beautiful meadows of Hatfield, which operate more effectually to set off by way of contrast other parts of their fine farming; I mean the practice of naked fallows with the hopes that exhausted lands may be recruited by mere rest and weeds.

The next obstacle to improvement is the want of manure. This is a serious want. Good crops cannot be obtained without manure, but how to obtain the manure is the difficult question. The first step certainly is the consumption of the produce upon the place. This is pretty generally done; but much of the materials for manure furnished by the crops themselves is most improvidently wasted. This is particularly re-



markable in regard to the corn crop, where the butts and husks instead of being carried into the barn and yards to be there used as food or converted into manure as litter, are left to perish in the field, returning comparatively nothing to the earth ; and though browsed by cattle, yet yielding under these circumstances nothing deserving consideration. You will pardon me if I speak of such a practice as wasteful and slovenly. Every vegetable product on a farm, which can be used advantageously as food, should be so appropriated ; and what will not answer as food should be carefully collected for the purpose of littering the styes, stables, and yards. The great rule should be to gather up the fragments that nothing be lost.

In the next place almost every farm furnishes in some bog-hole or reservoir valuable materials for compost manure, which if carefully conveyed to the styes and yards to be worked over and made to absorb the liquids which are there floating, will turn to great advantage. The conveyance of common dirt other than sufficient for this absorbing purpose will not pay the labor of transportation ; for the manure may as well be mixed with it in the field as in the barn yard, and the labor of carting be saved. In some parts of the country, as for example in Bernardston, where the soil is cold and hungry, there are extensive depositories of peat mud, which, where properly managed, and made to undergo a fermentation by the intermixture of horse manure, a process well known to intelligent farmers, and by the discovery of which the name of an English nobleman has been immortalised, will yield a valuable manure, precisely suited to the soils among which it is found.

The agriculture of the country is not yet in a sufficiently advanced state to pay much attention to the saving of liquid manures ; as in the best cultivated countries of Europe, where it is considered as the most useful form of applying all animal manures ; and where every farm is furnished with the means of preserving and of applying this most powerful stimulus to vegetation. Provision for the same purposes will presently be made among us, when our farmers feel more sensibly, than



they now do, the importance of availing themselves of every resource of productiveness and profit, within their reach.

The soiling of animals, that is the keeping them in yards or stables through the whole year, where, when attainable they are fed upon green food daily gathered for their use, is an abundant source of manure ; and to a certain extent, as in many of our river towns where pasturage is difficult to be procured, might be practised to the great advantage both of the stock and the owner. Few persons, who have made no experiments and given no attention to the subject, have any proper idea, to what advantage and extent, the produce of a single acre properly cultivated may be applied. I shall make no apology for speaking with so much directness on so homely a subject as that, which we have now treated. It is nothing but a silly affectation of delicacy, which turns with disdain from any of the wonderful processes of nature however humble. The most splendid bouquet, which ever poured out its delicious perfumes on the unsullied bosom of youthful innocence and beauty, is the luxuriant offspring of the manure heap ; and the cultivated, well-disciplined, and devout mind will contemplate with grateful delight that mysterious operation of divine providence, that signal display of an unsearchable wisdom and goodness, by which every thing in nature becomes subservient to some valuable end ; and the most offensive substances are converted into objects and forms of beauty, utility, luxury, and delicious indulgence.

The use of mineral manures, such as lime and gypsum, ought to claim much more attention than it has done. The theory of their operation is still among the numberless secrets of nature, into which human sagacity attempts in vain to penetrate, and before which man's boasted wisdom stands utterly confounded ; but their practical, beneficial, and astonishing results are no longer matter of question. Lime, in any quantity in which we might be glad to apply it, is too expensive a manure to be freely used among us ; but no manure can be cheaper than gypsum ; and its effects are very extraordinary.

Its mode of application is still however matter of experiment ; and experiments here are greatly desired. On our alluvial lands its effects are said not to be apparent ; on our hills, in some cases most strikingly so. An intelligent farmer on the Hoosac river informed me that they had found the use of it on lands, where the growth was maple, beach, &c. of no avail ; but on their pine and oak lands separated from the other only by the river, immediate and valuable. To clover it is applied always with great advantage. Every well-attested fact in regard to it deserves attention, and ought to be fully and exactly communicated to the agricultural public.

Another means of improving lands, the value of which experiment has amply confirmed is the intermixture of soils. What is properly called marl, an unctuous and calcareous clay, which will effervesce on the application of acids, has not been found among us. A valuable deposit of it has been recently discovered in New Jersey, which the farmers are there applying with great advantage. In our primitive region it is perhaps not to be looked for. But we have peat, bog mud, sand, and clay in abundance in different parts of the country ; and the application of clay to a sandy, and of sand to a clayey soil, is of obvious utility ; and often of better and certainly more permanent effects than the most abundant dressing of animal manures. Some of our Deerfield farmers, I am told, have found the application of clay to a certain extent as a top dressing on their grass grounds of great advantage ; but I am not sufficiently advised on the subject to speak more fully. An intelligent farmer of Plymouth county,† whose authority, I know from personal acquaintance, is to be entirely relied on, has practised with great success and to a considerable extent on this principle of the intermixture of soils ; and has rendered his farm, at first quite inferior, one of the most productive in the county. He has given the details of his experience to the public in a dissertation, for which he was honored with the

† The Rev. Morrill Allen, of Pembroke, Mass.

premium of the Massachusetts Agricultural Society ; a dissertation, deserving the attention of every inquisitive farmer.

The next means of improving your lands is to extend your cultivation. The more produce to be consumed, the more manure to be applied ; and so the enriching and improvement of your land may be kept on in a continually accelerated ratio. I am aware that the proposition to extend your cultivation, with a view to the improvement of your farms, will be received with distrust ; this will excuse me for dwelling upon it more at large. I will give you my opinion ; and shall be happy to be corrected by your better judgment.

I admit that in general it is a good rule in husbandry, to cultivate no more land than you can manure well ; and to manure well and tend well all you do cultivate. I would recommend it as strongly as any one ; but under peculiar circumstances there are excepted cases to every rule however reasonable. Your farm is run down and impoverished. You wish to restore it ; to wake its dormant energies ; and, if possible, to make it stand upright again. Agricultural improvements are always slow. It requires a year to accomplish the most simple experiment ; and often many years to effect any extraordinary alteration. But there must be a beginning, and the first step in any valuable undertaking is commonly difficult and discouraging. When Ledyard, a lad, animated by the indomitable spirit of adventure, first launched his frail canoe, more than a hundred miles from this spot on the waters of the Connecticut, to him an unexplored stream, it required a bold heart to push from the shore into the descending current ; but as he was borne along its winding and fertile banks, he was cheered by the consciousness of his onward progress and triumphant adventure ; and continually more and more animated by the hope of farther knowledge, success, and power. This confidence of progress, this hope of ultimate success, certain to persevering and judicious labor, is the great encouragement, which is to sustain us.

Let us suppose, then, that you have an impoverished acre of



land, and at present no manure to apply to it. What is to be done? Perhaps it will bear rye, the crop which seems to demand less of the soil than any other; and will put up with the meanest fare. At present it gives you comparatively nothing. Sow it then with rye and clover; plaster it; gather your rye; perhaps you will not get back even your seed. Now use the straw carefully for litter, and convert it either by means of your swine or cattle into manure;—plough in your clover, if there is any of it, after it has gone to seed: apply the manure be it more or less, which you obtained from the straw gathered from this acre, and be careful not to cheat the land of any thing that belongs to it. Sow it again with rye and clover and repeat the same process. The second crop may be expected to be better than the first; and, though the returns may for some time be small, they will be continually increasing, and will soon be a full return for the labor and expense applied. Your land will be in a course of improvement, and your means of enriching your soil will be increasing in a correspondent proportion. If in addition to this you can, as I before remarked, depasture such clover with sheep; and enrich such land by the addition of some soil in the neighborhood suited to its improvement, the balance of such husbandry will be in the end greatly to your advantage. This is one process, which may be adopted without any great outlay to the improvement of worn out lands, where manure is not to be obtained; but there are other modes, and other crops by which it may be effected, which the time does not allow me to particularize.

There is another ground on which farmers, whose whole profession and business is husbandry, and who are looking to its fair returns as an honest compensation for their labor, should be urged to extend their cultivation. If any portion of your land is absolutely worthless; and you are satisfied that by no process, which you can apply to it, you can ever obtain an equivalent for the labor employed in its cultivation, then indeed for cultivation let it be abandoned, or appropriated to



any purpose in which it may yield something, and the most that it can be made to yield.

There is likewise land, which is in permanent meadow ; and which by no cultivation can be made so productive as in its present condition.—Leave this then as it is. It would be very injudicious to disturb it. But on many farms there is some land, which is turned into pasture and affords but a scanty supply to the animals, which are fed upon it ; or which remains in mowing, yielding a small crop of hay, which by cultivation might be made to yield good crops of corn, potatoes, and grain ; and then be rendered far more productive of grass than in its present state. I believe there is much land in this condition ; and this induces the complaint that our farms are too large for a profitable cultivation. Why should such land remain uncultivated ? Why should you be satisfied with less than half a crop ? What would you say of the capitalist, who was bent upon increasing his fortune, who permitted any portion of his capital, which he could use without loss, to remain in his coffers unemployed ? What should we say of the manufacturer, who should suffer any portion of his power to run to waste, or of his machinery to be unemployed, or of his raw material to lay by in useless accumulation, when it might all be employed to more or less advantage ? He might by such a process consult his ease, but certainly not the advancement of his fortune. We can say nothing different of the farmer, who permits any portion of his grounds to remain unemployed ; or who neglects to obtain from them all that they can be made to produce. We believe that there is little land of a kind which may be cultivated without loss, but what may, by judicious and persevering labor, by a process within the power of the farmer, whose means are restricted and humble, be placed in a course of certain improvement, and afford a fair profit to his exertions.

The answer commonly given to these suggestions is, that labor is so expensive we cannot afford to cultivate our land. I admit that the expense of labor is very high compared with

the value of produce. Yet I cannot but believe, in circumstances ordinarily favorable, and where the price of land is not exorbitant, the man, who attempts to thrive by the plough, and does himself either "hold or drive," if his management is judicious and persevering, and his habits frugal and temperate, will obtain a fair compensation for his labor and pains. If then the balance of his cultivation is upon the whole in his favor, why should he not extend it as far as it can be extended to advantage? why should he permit a single acre of his land to remain unproductive, which may be made productive? if he can plant ten acres to advantage, why not plant twenty? if he can produce two hundred bushels of corn, why should he not attempt to raise five hundred? in short why should he not carry his cultivation to the utmost limits of a profitable return? Beyond that certainly we would not advise him to go. Under such circumstances he engages in no dishonorable competition; his gains are at no other man's expense or loss; on the contrary he contributes essentially to the general good, as the increase of his produce tends in a certain proportion to lessen its price in the market; and renders therefore the comforts and supplies of life more accessible to the poorer classes of the community, and certainly not less so to the richer.

This brings us to the great subject of the proper size of farms. It is often said that an acre of land well manured and cultivated is better than two acres poorly or imperfectly manured and cultivated; but it is not so good as two acres well manured and cultivated; nor is it so good as two acres poorly manured and cultivated, if the profit from the two acres is, after all expenses are allowed, greater than the gain from the one acre, though not in an equal proportion. He is the best farmer, as far as agriculture is considered in a pecuniary view, whether he cultivate much or little, who obtains the greatest amount of produce at the least expense.

A farm is too large, when from its size any part of it is necessarily left unproductive and uncultivated; or if from its extent its owner or landlord is incapable of its careful superin-

tendence. But a farm is not too large, when its perfect and exact superintendence, is practicable to its owner ; when every part of it is made as productive as the nature of the case admits ; when upon the whole result it yields a fair remuneration ; and no part of it can be withdrawn from cultivation without a diminution of its profits. Farms are often too large ; too large for the capital, which the owner is able to apply to the management, for a successful agriculture can no more be prosecuted than a successful manufacture of any kind can be prosecuted without a considerable floating capital ; and they are often too large for the superintendence of a single individual, for the management can seldom be divided or any part of it neglected without loss and injury ; but it is to be remembered that large farms are always cultivated at a much less proportional expense than small ones. The expenses of outfit in regard to utensils, team and its appendages, and a great variety of necessaries, is by no means double on a farm of large size to what it would be on a farm of half the extent. Many advantages are found on a large farm from the division of labor, which is practicable among a number of hands, and from the convenience of having a number of laborers at command, when any pressing emergency occurs ; and from the opportunity of constant use of all the brute labor to advantage on a large farm, which is not possible on a small farm ; though it may be that the same amount of team must be supported. The larger the farm, if well managed, the greater the profit ; and in the kind of farming of which we are treating, the amount of profit obtained, after the amount of debit and credit is fairly adjusted, must be the test of its excellence.

Another means of success, to which the attention of the farmer must be particularly directed, is that of the saving of labor. Though he should be averse from withholding labor, wherever it can be profitably applied, yet it should be a great study with him how to apply it to the most advantage. His profession under the best circumstances will require much hard toil ; and he cannot look to avail himself of those facilities and



aids, which the mechanic and the manufacturer find in the invention of the most curious machinery, and the application of water and steam power to their various arts. Yet the farmer is not without advantage from the improvements of science and mechanical ingenuity. An immense gain has been effected in the great machine the plough; and in regard to the facility of holding, the ease of draught, and the manner of executing the work, the modern cast iron plough of the most improved construction has an extraordinary advantage over the clumsy and cumbrous machine of former times. The revolving horse-rake is a machine of great utility; by which on smooth land a man and boy and horse will easily perform the work of six men.—A threshing machine, whose operation has been completely tested, has lately been introduced here, which promises to be of great utility. It is worked by a single horse, and is without difficulty transported from place to place. It performs its work in a perfect manner and has been known to thresh two bushels of grain in five minutes. Two men, a boy, and a horse, will easily thresh one hundred bushels in a day; and the actual saving of grain, from the more effectual manner in which it performs its work over what can be done by a flail, is very great. A roller of an improved construction is exhibited on this occasion; and deserves the attention of farmers as an instrument next in value to a harrow or a plough, and almost as indispensable to good cultivation. This is literally the age of invention. Improved machines for shelling corn, for cutting fodder, for grinding corn in the cob, &c. are fast coming into use, and promise great advantages. We may hope that other inventions may present themselves to ingenious and inquisitive minds, by which the severe toil of the husbandman may be lightened and abridged.\*

\* A mowing machine moved by horse power, and producing a great saving of manual labor, has been for two or three years in successful operation in Pennsylvania, and the western parts of New York; and from the testimony of one of the largest farmers in the United States, upon whose farm it has been two years in use, is highly successful. We cannot imagine what human skill and enterprize may yet effect. Professor Rafinesque,



Another great object of the farmer should be to restrict the expenses of his farming establishment ; to cut off all unnecessary expenditures ; and to apply his produce, as far as it is consumed on the farm, in the most frugal manner. The cooking of much of the food of his domestic animals increases its nutritive powers ; and causes it to spend to much more advantage. The cutting of fodder for his horses and neat cattle is of great utility, and will effect a saving, as the most exact experiments have shown, of more than one quarter. The preference of ox labor over horse labor deserves his particular attention. The keeping of a horse is a great expense separate from the accidents to which he is exposed ; and in most respects the patient ox has greatly the advantage over him, especially as the former is an improving and the latter always a deteriorating capital.

The crops to which the farmer may to most advantage devote his cultivation will deserve his particular consideration. Indian corn, of which I have not a doubt the crops in this part of the country may be easily doubled, is a most valuable product. I congratulate the farmers upon the favorable prospects, which now present themselves in regard to the cultivation of wheat. The two last years have presented extraordinary encouragements, and by proper management, and especially by early sowing, success in this cultivation becomes highly probable.

The establishment of extensive manufactories, and the introduction of power-looms and spinning-jennies, has nearly destroyed the usual household manufactures, and put our other Jennies out of employment. Our ears are seldom greeted now a days in the farmer's cottage with the flying of the shuttle, or the deep base of the spinning wheel. We confess that we have looked upon their departure with a strong feeling of

of Philadelphia, a gentleman of distinguished scientific attainments, advertises, for farmers, his " steam ploughs, by which six furrows are ploughed at once ; and he promises in one day to perform the work of a week in the best manner." Of their construction or operation I have no idea.

regret ; and deem it no small abatement of the advantages, which the establishment of extensive manufactures has obviously yielded to the country, that it removes the daughter from the shelter and security of the paternal roof, and places her in a situation, which certainly furnishes no means of qualifying her for the proper department of woman ; to preside over our domestic establishments ; to perform her part in the joint labors of the household ; and to know how and when and where to use, prepare, and to apply to the best advantage within doors, the products of man's labor without doors. Many occupations of female industry, strictly domestic however, of a healthy and agreeable nature, are constantly presenting themselves, so that there is little danger that the race of industrious women, and accomplished wives, at least among the country girls, will soon be extinct ; and the silk culture, fast gaining ground among us, promises to furnish an unexhausted resource and a profitable employment of female labor.

IV. A variety of important topics press themselves on this occasion upon our attention ; but I forbear, having already trespassed too far upon the candor of my respected audience.

Agriculture is a great subject. The first of all the arts, it may derive aid from them all. The foundation of human subsistence, comfort, and enjoyment, the origin of all wealth, and the basis of commerce and manufactures, it deserves the profound attention of enlightened and philanthropic minds. That attention it has often and will continue to receive. Agriculture is already greatly in debt to science. Ignorance and prejudice may deny the obligations ; but all the great improvements, which have ever been made in agriculture, have been effected by the inquiries and experiments of men of enlightened and active minds, of wealth and public spirit. Their experiments have been made often at a serious expense to themselves, but at a proportionate gain to others. They have often been wholly unsuccessful ; but in an art so entirely practical as agriculture, it is as important to know what cannot, as to de-

terminine what can be done. There is no prejudice more contemptible and senseless than that which prevails against what is called book-farming, and professes to disdain all instruction, which comes in a printed form. If by book farming be meant that a man undertakes to cultivate his farm by mere theory without any experimental knowledge or observation, I only say that no such instances have come within my knowledge ; but if it be meant only that an intelligent man avails himself of the history of the agriculture of other men and other countries, as far as it is applicable to his own condition, and of all the aids which science or art, chemistry, botany, zoology, anatomy, entomology, natural history, natural philosophy and mechanics can afford in relation to the subject ; and of the actual and exact experiments of other men faithfully made and fully detailed, I am not able to see how he could pursue a wiser course, for his own interest and success, the general improvement of the art, and the benefit of society.

It is to be hoped that the intellectual improvement of the agricultural classes will keep pace with that of other classes in our favored community. In that impetuous struggle for advancement in knowledge, which is every where hurrying the working classes forward, may the farmers neither hold back, nor get out of the traces, nor lag behind. Their opportunities for improvement are great. Books are universally accessible. Small associations or circles for mutual improvement are highly useful as well as agreeable ; and the long evenings of winter, instead of being worse than wasted in the senseless gossip and idle talk of the shop or tavern, afford most favorable opportunities for useful reading, for the instruction of our families ; and the enjoyment of the innocent and delightful recreations of domestic life.

The respectable farmer occupies a most important and responsible moral station in the community. Coming in contact with a numerous class of young men, whose manners and morals have been too often coarse, vulgar, intemperate, and disreputable, it becomes his duty, and he should deem it a great



privilege, to exhibit such an example of sobriety, decorum, civil manners, and blameless conversation, as can hardly fail to command their respect and to win their esteem. Profaneness, indecency, and intemperance, which have been but the too common vices of this class of men, he should resolutely expel from his territory ; and above all things not countenance them by a disgraceful example. The farming interest is fast experiencing the most important benefits of the utter disuse of ardent spirit, the complete exorcism of this worst of evil spirits from their premises. Many a thrifty farm and many a beautiful cottage, the abode of industry, contentment, and competence, has been washed away by the bitter stream of New England rum ; and it has gradually undermined the tenement, until at last the whole inmates have fallen in a common ruin, and have floated downwards on a current which never stops, into the dark ocean of infamy and unutterable wretchedness.

Agriculture can never be looked to in this part of the country as a source of wealth. Yet it may be made to yield an ample competence ; and sufficient to satisfy the reasonable desires of a well disciplined mind, which has just views of human life, and is neither cankered by vice nor intoxicated by ambition. His gains, the fruits of honest industry, made at no man's expense, and prejudicing no man's interest, may be enjoyed with the full satisfaction of his own heart and conscience. His occupation presents no hazards to his own or his children's virtue. He has at his command all the means of subsistence and comfort. His abode is the calm abode of peace, industry, frugality, and contentment. His table is spread with the substantial fruits of his own labor. His clothing is gathered from the flocks which he himself feeds ; and woven by the industrious hands of the wife and children whom he loves, and who love to share his labor, he wears it with an honorable and enviable pride. When honor and integrity, kindness and piety shed their combined influence over such a habitation, however lowly, humble, secluded, weather-beaten or moss-covered, it

presents an example of substantial independence and domestic comfort, which the proudest monarchs of the earth may envy.

The farmer of all others should be a man of religion. If pious gratitude and confidence find no place in his bosom, his mind must be debased by selfishness, and his heart as hard as the stones of his fields. "Even the ox knoweth his owner and the ass his master's crib." How can he then, receiving so immediately as he does from the hand of God the exuberant bounties of his providence, be unmindful of the source of all his power and all his blessings !

In the wonderful operations of nature constantly going on around him, he is compelled to remark the wise and ever active providence which sustains and directs all things. In the part which he is called to perform in these extraordinary and miraculous processes, he is most forcibly reminded of his own dependance. In the abundant fruits, which crown his labors, and the ample and rich provision every where made for the support and enjoyment of all the animated creation, he cannot but adore the infinite goodness of the **AUTHOR** and mysterious **PRESERVER** of nature. In every department of the wide field in which **GOD** requires or permits him to toil or to partake ; as the humble co-operator in the labors of the great **HUSBANDMAN** or the favored recipient of his unrestricted bounty ; he has constant occasion to regard Him as the great object of his reverence, confidence, and love ; of his humble and devoted obedience ; of his fervent and filial gratitude ; and to bow down before Him as " all in all."

## HYMN.

COMPOSED FOR THE OCCASION, BY J. DEANE, M. D.

O THOU whose goodness fills all space,  
 Hear us in Heaven thy dwelling place,  
 While now with gratitude we raise  
 Our humble song of feeble praise.

Thou mak'st the changing year roll round  
 In seasons with abundance crowned ;  
 The smiling spring, the summer's glow,  
 Give life and warmth to all below.

To THEE from whom all mercies spring,  
 Creation's fairest works we bring ;  
 We dedicate them in thy name  
 To Mercy's source from whence they came.

We bring the harvest of the soil,  
 That crowns the year and pays our toil,  
 The fruits that Autumn's bounteous hand  
 Hath scattered o'er our happy land.

We bring the works that art and mind  
 Impart to aid and bless mankind ;  
 What genius, skill and art bestow  
 To Nature's Architect we owe.

Great God, still open wide the door  
 That swells our treasure and our store ;  
 And at the final harvest day  
 To Thy fair garners speed our way.



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